



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO
09/990,819	11/16/2001	Thomas J. Augustin	10014433-1	3764
7590 12/11/2003				
HEWLETT-PACKARD COMPANY Intellectual Property Administration P.O. Box 272400 Fort Collins, CO 80527-2400			EXAMINER BUI, HUNG S	
			ART UNIT 2841	PAPER NUMBER

DATE MAILED: 12/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/990,819	AUGUSTIN ET AL.	
	Examiner	Art Unit	
	Hung S Bui	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lo et al. [US 6,282,096] in view of Chu et al. [US 6,424,533].

Regarding claims 1-3, 6 and 8-10 Lo et al. disclose an apparatus (figure 7) for improved shock and vibration isolation of a circuit component (1) utilizing solder connection array to provide electrical connection to a base component (7) comprising:

- a support frame (82) attached to the circuit component and the base component with a circuit component; and
- an isolation member (100) located at a point between the circuit component support frame and the base component such that a vibration or shock to the base component must travel through the isolation material prior to reaching the circuit component.

Lo et al. disclose the instant claimed invention except for the isolation member being an isolation material.

Chu et al. disclose a polymer foam isolation material for a circuit component (column 5, line 57 – column 6, line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use foam for the isolation member of Lo et al., as suggested by Chu et al., for the purpose of evenly distributing/reducing shock force(s).

Regarding claim 4, Lo et al. disclose the instant claimed invention except for an additional component being supported by the support frame.

Chu et al. disclose stacked components (figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add additional component to Lo et al., as modified by Chu et al., for the purpose of providing isolation for multiple components.

Regarding claim 5, Lo et al. disclose the support frame including a lid (figure 6).

3. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lo et al. in view of Chu et al., as applied to claim 1 above, and further in view of Ohbuchi et al. [US 5,719,746].

Regarding claims 7 and 11, Lo et al. in view of Chu et al. disclose the instant claimed invention except for a lid/support frame including a protrusion which cooperates with a corresponding recess on the other of the lid/support frame with an isolation material therebetween.

Ohbuchi et al. disclose a lid (108, figure 6) having a protruded portion (134) extending into a recess (124) on a support member (106), wherein the protrusion is surrounded by an epoxy sealant (110, figure 6).

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use the cover mounting design of Ohbuchi et al. for the lid of Lo et al. in view of Chu et al., for the purpose of both sealing and isolating the lid from the support frame.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lo et al. in view of Chu et al., as applied to claim 8 above, and further in view of Patel [US 5,587,882].

Regarding claim 12, Lo et al. in view of Chu et al. disclose the instant claimed invention except for a heatsink mounted on a support frame by means of an isolation material.

Patel discloses a heatsink (50) mounted on a support frame (figure 6) by means of an isolation material (41, column 5, lines 1-4).

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use the heatsink and its specific mounting with the support frame of Lo et al. in view of Chu et al., for the purpose of improving heat dissipation and providing isolation.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lo et al. in view of Chu et al., as applied to claim 8 above, and further in view of Yasukawa et al. [US 5,793,106].

Regarding claim 13, Lo et al. in view Chu et al. disclose the instant claimed invention except for the support frame being attached to the circuit board via a screw and the isolation material being located at a point between the screw and the circuit board.

Yasukawa et al. discloses a support frame (7) being attached to the circuit board (9) via a screw (10) and an isolation material (16) being located at a point between the screw and the circuit board (figure 1).

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use frame mounting method of Yasukawa et al. for the frame of Lo et al. in view of Chu et al., for the purpose of firmly securing and isolating the support frame.

Response to Arguments

6. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.



Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung S Bui whose telephone number is (703) 305-8024. The examiner can normally be reached on Monday-Friday 8:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David S Martin can be reached on (703) 308-3121. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-4349.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-5115.

11/24/03
HB



DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800